

## CLAIMS

What is claimed is:

1 1. A method comprising the steps of:  
2 encoding a video stream in a first compressed format;  
3 storing the video stream encoded in the first compressed format in a storage  
4 device;  
5 retrieving the video stream encoded in the first compressed format from the  
6 storage device;  
7 decoding the video stream encoded in the first compressed format;  
8 encoding the decoded video stream in a second compressed format; and  
9 storing the video stream encoded in the second compressed format in the storage  
10 device.

1 2. The method of claim 1, wherein the method is implemented by a television set-top  
2 terminal.

1 3. The method of claim 1, wherein the second compressed format enables a higher  
2 compression rate than the first compressed format.

1 4. The method of claim 1, wherein the first compressed format is a format of lesser  
2 computational complexity than the second compressed format.

1 5. A method comprising the steps of:  
2 encoding a video stream such that the video stream has a first bit-rate;  
3 storing the video stream having the first bit-rate in a storage device;  
4 retrieving the video stream having the first bit-rate from the storage device;  
5 decoding the video stream having the first bit-rate;  
6 encoding the decoded video stream such that the decoded video stream has a  
7 second bit-rate that is lower than the first bit-rate; and  
8 storing the video stream having the second bit-rate in the storage device.

1 6. The method of claim 5, wherein the method is implemented by a television set-top  
2 terminal.

1 7. The method of claim 5, wherein the video stream having the first bit-rate is in a  
2 format that requires higher computational complexity.

1 8. The method of claim 5, wherein the video stream having the first bit-rate and the video  
2 stream having the second bit-rate are in an MPEG-2 format.

1 9. The method of claim 5, wherein the video stream having the first bit-rate and the video  
2 stream having the second bit-rate are in an H.264 format.

1 10. A method comprising the steps of:  
2 receiving a video stream;  
3 compressing the video stream in a manner that is responsive to the availability of  
4 computing resources; and  
5 recompressing the compressed video stream in a manner that is responsive to the  
6 availability of computing resources.

1 11. The method of claim 10, wherein the step of recompressing the compressed video  
2 stream comprises:  
3 decoding the compressed video stream; and  
4 encoding the decoded video stream.

1 12. The method of claim 10, wherein the computing resources comprise at least one of an  
2 instruction execution resource, bus bandwidth, memory capacity, storage capacity, and  
3 access to storage capacity.

1 13. The method of claim 10, wherein the method is implemented by a television set-top  
2 terminal (STT).

1 14. A method comprising the steps of:  
2 receiving a video stream;  
3 compressing the video stream in a manner that is responsive to one or more  
4 characteristics of the received video stream; and

5 recompressing the compressed video stream in a manner that is responsive to one  
6 or more characteristics of the compressed video stream.

1 15. The method of claim 14, wherein the received video stream is compressed in a  
2 manner that is responsive to at least one of a format of the received video stream, a bit  
3 rate of the received video stream, a picture size corresponding to the received video  
4 stream, a frame rate of the received video stream, a color characteristics of the received  
5 video stream, a complexity of the received video stream, or frame types that are included  
6 in the received video stream.

1 16. The method of claim 14, wherein the compressed video stream is recompressed in a  
2 manner that is responsive to at least one of a format of the compressed video stream, a bit  
3 rate of the compressed video stream, a picture size corresponding to the compressed video  
4 stream, a frame rate of the compressed video stream, a color characteristics of the  
5 compressed video stream, a complexity of the compressed video stream, or frame types  
6 that are included in the compressed video stream.

1 17. The method of claim 14, wherein the step of recompressing the compressed video  
2 stream comprises:

3 decoding the compressed video stream; and  
4 encoding the decoded video stream.

1 18. The method of claim 14, wherein the method is implemented by a television set-top  
2 terminal (STT).

1 19. A method comprising the steps of:

2 monitoring consumption of computing resources over an extended time period;  
3 receiving a video stream;  
4 compressing the video stream; and  
5 recompressing the compressed video stream at a future time that is responsive to  
6 availability of computing resources at the future time.

1 20. The method of claim 19, wherein the computing resources comprise at least one of an  
2 instruction execution resource, bus bandwidth, memory capacity, storage capacity, and  
3 access to storage capacity.

1 21. The method of claim 19, wherein the step of monitoring consumption of computing  
2 resources comprises monitoring user input.

1 22. The method of claim 19, wherein the method is implemented by a television set-top  
2 terminal (STT).

1 23. A set-top terminal (STT) comprising:

2 an encoder configured to compress a video stream in a first compressed format;  
3 a decoder configured to decompress the video stream encoded in the first  
4 compressed format; and  
5 an encoder configured to re-compress the decompressed video stream in a second  
6 compressed format.

1 24. The STT of claim 23, wherein the second compressed format enables a higher  
2 compression rate than the first compressed format.

1 25. The STT of claim 23, wherein the first compressed format is an MPEG-2 format and  
2 the second compressed format is an H.264 format.

1 26. A set-top terminal (STT) comprising:  
2 an encoder configured to compress a video stream such that the video stream has a  
3 first bit-rate;  
4 a decoder configured to decompress the video stream having the first bit-rate; and  
5 an encoder configured to re-compress the decoded video stream such that the re-  
6 compressed video stream has a second bit-rate that is lower than the first  
7 bit-rate.

1 27. The STT of claim 26, wherein the video stream having the first bit-rate is in an  
2 MPEG-2 format and the video stream having the second bit-rate is in an H.264 format.

1 28. The STT of claim 26, wherein the video stream having the first bit-rate and the video  
2 stream having the second bit-rate are in an MPEG-2 format.

1 29. The STT of claim 26, wherein the video stream having the first bit-rate and the video  
2 stream having the second bit-rate are in an H.264 format.

1 30. A set-top terminal (STT) comprising:  
2 an encoder configured to compress the video stream in a manner that is responsive  
3 to the availability of computing resources; and  
4 an encoder configured to recompress the compressed video stream in a manner  
5 that is responsive to the availability of computing resources.

1 31. The STT of claim 30, wherein the encoder configured to recompress the compressed  
2 video stream comprises is configured to decode the compressed video stream.

1 32. The STT of claim 30, wherein the computing resources comprise at least one of an  
2 instruction execution resource, bus bandwidth, memory capacity, storage capacity, and  
3 access to storage capacity.

1 33. A set-top terminal (STT) comprising:  
2 an encoder configured to compress a video stream in a manner that is responsive  
3 to one or more characteristics of the received video stream; and  
4 an encoder configured to recompress the compressed video stream in a manner  
5 that is responsive to one or more characteristics of the compressed video  
6 stream.

1 34. The STT of claim 33, wherein the received video stream is compressed in a manner  
2 that is responsive to at least one of a format of the received video stream, a bit rate of the  
3 received video stream, a picture size corresponding to the received video stream, a frame  
4 rate of the received video stream, a color characteristics of the received video stream, a  
5 complexity of the received video stream, or frame types that are included in the received  
6 video stream.

1 35. The STT of claim 33, wherein the compressed video stream is recompressed in a  
2 manner that is responsive to at least one of a format of the compressed video stream, a bit  
3 rate of the compressed video stream, a picture size corresponding to the compressed video  
4 stream, a frame rate of the compressed video stream, a color characteristics of the  
5 compressed video stream, a complexity of the compressed video stream, or frame types  
6 that are included in the compressed video stream.

1 36. The STT of claim 33, wherein the encoder configured to recompress the compressed  
2 video stream is configured to decode the compressed video stream.

1 37. A set-top terminal (STT) comprising:  
2 a module configured to monitor consumption of computing resources over an  
3 extended time period;  
4 an encoder configured to compress a video stream; and  
5 an encoder configured to recompress the compressed video stream at a future time  
6 that is responsive to availability of computing resources at the future time.

1 38. The STT of claim 37, wherein the computing resources comprise at least one of an  
2 instruction execution resource, bus bandwidth, memory capacity, storage capacity, and  
3 access to storage capacity.

1 39. A method comprising the steps of:

2 storing a video presentation having a first compression format;  
3 transcoding a first portion of the video presentation such that the first portion has a  
4 second compression format while a second portion remains in the first  
5 compression format;  
6 decoding the first portion having the second compression format;  
7 providing the first portion to a user;  
8 decoding the second portion having the first compression format; and  
9 providing the second portion to the user.

1 40. A method implemented by a television set-top terminal, comprising the steps of:

2 encoding a video stream in a first compressed format;  
3 storing the video stream encoded in the first compressed format in a storage  
4 device;  
5 retrieving the video stream encoded in the first compressed format from the  
6 storage device;  
7 decoding the video stream encoded in the first compressed format;  
8 encoding the decoded video stream in a second compressed format; and  
9 storing the video stream encoded in the second compressed format in the storage  
10 device;

11 wherein the first compressed format is an MPEG-2 format and the second  
12 compressed format is an H.264 format; and

13 wherein the second compressed format enables a higher compression rate than the  
14 first compressed format.